

Federal Communications Commission

§ 21.107

to prevent the emission included within the occupied bandwidth from radiating outside the assigned channel at a level greater than that specified in § 21.106.

[44 FR 60534, Oct. 19, 1979, as amended at 46 FR 23450, Apr. 27, 1981; 48 FR 50329, Nov. 1, 1983; 48 FR 50732, Nov. 3, 1983; 49 FR 37775, Sept. 26, 1984; 54 FR 10327, Mar. 13, 1989; 54 FR 24905, June 12, 1989; 55 FR 46009, Oct. 31, 1990; 56 FR 57816, Nov. 14, 1991; 61 FR 26675, May 28, 1996; 63 FR 65101, Nov. 25, 1998; 64 FR 63730, Nov. 22, 1999]

§§ 21.102–21.104 [Reserved]

§ 21.105 Bandwidth.

Each authorization issued pursuant to these rules will show, as the emission designator, a symbol representing the class of emission which shall be prefixed by a number specifying the necessary bandwidth. This figure does not necessarily indicate the bandwidth actually occupied by the emission at any instant. In those cases where part 2 of this chapter does not provide a formula for the computation of the necessary bandwidth, the occupied bandwidth may be used in the emission designator.

[49 FR 48700, Dec. 14, 1984]

§ 21.106 Emission limitations.

(a) The mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the following schedule:

(1) When using transmissions other than those employing digital modulation techniques:

(i) On any frequency removed from the assigned frequency by more than 50 percent up to and including 100 percent of the authorized bandwidth: At least 25 decibels;

(ii) On any frequency removed from the assigned frequency by more than 100 percent up to and including 250 percent of the authorized bandwidth: At least 35 decibels;

(iii) On any frequency removed from the assigned frequency by more than 250 percent of the authorized bandwidth: At least $43+10 \log_{10}$ (mean output power in watts) decibels, or 80 decibels, whichever is the lesser attenuation.

(2) When using transmissions employing digital modulation techniques (see § 21.122(b)) in situations other than those covered by subpart K of this part:

(i) For operating frequencies below 15 GHz, in any 4 kHz band, the center frequency of which is removed from the assigned frequency by more than 50 percent up to and including 250 percent of the authorized bandwidth: As specified by the following equation but in no event less than 50 decibels. $A=35+0.8(P;\text{minus};50)+10 \log_{10} B$. (Attenuation greater than 80 decibels is not required.)

where:

A=Attenuation (in decibels) below the mean output power level.

P=Percent removed from the carrier frequency.

B=Authorized bandwidth in MHz.

(ii) In any 4 kHz band, the center frequency of which is removed from the assigned frequency by more than 250 percent of the authorized bandwidth: At least $43+10 \log_{10}$ (mean output power in watts) decibels, or 80 decibels, whichever is the lesser attenuation.

(b) When an emission outside of the authorized bandwidth causes harmful interference, the Commission may, at its discretion, require greater attenuation than specified in paragraph (a) of this section.

[44 FR 60534, Oct. 19, 1979, as amended at 46 FR 23450, Apr. 27, 1981; 52 FR 23550, June 23, 1987; 61 FR 26675, May 28, 1996; 65 FR 46617, July 31, 2000]

§ 21.107 Transmitter power.

(a) The power which a station will be permitted to use in these services will be the minimum required for satisfactory technical operation commensurate with the size of the area to be served and local conditions which affect radio transmission and reception. In cases of harmful interference, the Commission may, after notice and opportunity for hearing, order a change in the effective radiated power of a station.

(b) The EIRP of a transmitter station employed in this radio service shall not exceed the values shown in the following tabulation: